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AGRICULTURAL MUSEUM:

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For the Agricultural Museum.

ANSWER

To the 2d, 13th, 22d, 25th and 80th queries of the Richmond Agricultural Society, published in No. 21 of the Agricultural Museum. The queries are these:—

"2d. The best rotation of crops in which Indian corn, wheat and clover are included.

"13. Is there any ameliorating crop that can be cultivated between a corn and a wheat crop with advantage.

"22 A rotation of crops in which annual leguminous plants follow Indian corn and precede wheat.

"25. Is there any leguminous crop that can be cultivated to advantage upon a large scale in a rotation of crop.

"80. The best mode of extirpating the wild garlic and other troublesome weeds."

In answering the first query the others are answered.

The best rotation of crops in which Indian corn, wheat and clover are included, are the following, to wit: *corn and turnips, oats, clover, wheat.* Let the turnips be sown in August, among the corn, upon clean ground, and the seed lightly harrowed in or rolled in; and in the winter fed off with sheep, cattle or hogs, but sheep in preference. Let the residue of the turnips left after the winter feeding, be ploughed in in the spring, and the oats sowed early when the ground is in the best order for ploughing. With the oats sow clover seed, and let the clover the following year in August be fallowed, (if completely taken) with one ploughing only, taking care to turn the sod over completely throughout the field; on

this single ploughing sow wheat. Then begin again with corn, &c. which give three grain crops in four years, and leaves the fall growth each year, and one whole year of clover to recruit the soil from the exhaustion of the grain, and at the same time turns to good account. The Indian corn in the first place properly cultivated, cleans the ground well from weeds, briars, foul grasses, and every other troublesome thing, better than any other preparation you can give it; and besides it is a most valuable crop, and its cultivation is familiar to Virginians and Marylanders. I choose turnips to succeed corn, because turnips grow best in the Fall, stand cold better than any plant we cultivate in fields; because when the corn is "*laid by*," as the planters call it, the ground is in excellent order, and in due season for turnips. Turnips flourish exactly in the same season as wild garlic; and having possession of the soil, and depriving the garlic of nourishment during the season in which it flourishes most, must help to extirpate it The turnips must not be dug up and carried away, but must be fed off on the soil, for its improvement: if carried away they would exhaust the land very much, but they do not exhaust when fed off; on the contrary, they are found to improve land Turnips managed in this way, are then an ameliorating crop, and an ameliorating crop ought to succeed a corn crop, which is a terrible exhauster. Another thing; as the turnips will not grow large in corn land, unless very rich, yet they will have more foliage and afford a better covering, and give more shade than any thing we cultivate during the Fall and Winter. I speak from experience. I need not repeat that shade has been found an essential and among the greatest improvers at all seasons. A turnip crop may be managed in this way, on the most extensive as well as the smallest scale, with the greatest facility; and gives at a cheap rate an abundant supply of winter food, an article so very much wanted in most parts of Virginia and Maryland; an article that is good for sheep, for cattle and for hogs. Food in winter that

be green and juicy, would save corn, and make, if I may be allowed a Yankee expression, sauce for our corn tops blades and straw, our usual provender.

Early in the spring, as soon as ever the ground is dry enough to plough, while yet it is in its most open, friable and crumbly state, seize the first opportunity to sow it in spring grain with clover; any kind of spring grain that suits your land best. I have mentioned oats, because it is most in use for a spring crop; and I have no idea, at least I never have been able to find out from experience, that oats did the land more harm than any other kind of grain. It is true, however, that Virgil has said, "Urit enim lini campanum seges urit avenæ;" that is, "Oats and flax burn the ground." That the immortal bard of Mantua was told so, I have no doubt; but now a-days, we have found out that great men are liable to mistakes, as well as common men. From my experience and minute observation, I must venture to assert, I think it an unfounded prejudice, bottomed upon no experience; upon nothing, (if I can be pardoned the sacrilegious expression) but musty record. Oats like all other kinds of grain, exhaust, but they certainly do no material injury to the soil; not so much as wheat or Indian corn according to my experience. It is time, at all events, after so many ages of abuse and traditional invective, bottomed on the *ipse dixit* of one man, that they should have a fair trial One thing in favor of oats; it has been found to answer and yield a profitable crop on ground that would not bring wheat, which is proof or evidence that it requires less nourishment; and if it requires and of course consumes less than wheat, how can it exhaust so terribly, as it is charged with doing Another thing in favor of oats; clover, when sowed with oats in the Spring of the year, never fails to take well throughout the field; whereas it very frequently misses when sowed on land in wheat in the Spring: especially when the Spring is dry—but let it be wet or dry, it almost always takes with oats. The oat crop gives abundant feed to horses, and of the best kind for horses and work-

ing animals, when corn begins to grow scarce; and when used with the cutting box, cutting the bundles grain and straw altogether, makes an excellent feed, and a very economical one.

Oats also help to extirpate garlic, for the same reason that turnips do. Garlic has two seasons for growing; one in the Fall and the other in the Spring. If it is dispossessed of the soil at both those seasons, it will wither and lessen every year. The clover which occupies the ground when the oats are taken off, must not be touched the first year it is sowed, but be suffered to get good root: nor ought it to be touched the next year, until the first of June; by that time it is in its prime. Then let it be cut, or if it will not bear cutting, turn in your whole stock of horses, cattle, sheep and hogs; and let them eat it clean; then plough it deep and turn the sod bottom upwards throughout; then harrow it the same way you ploughed it, (by no means cross it) which will fill up the spaces between the sods; then sow your wheat thick, according to the strength of the ground, and then harrow the same way you did before. A single ploughing and two harrowings, when well done, in a field well sodded over in grass, or thoroughly taken in clover, is accounted by the most experienced farmers the very best preparation that can be given to land for wheat; it certainly saves a great deal of hard labor. The thick long roots of clover penetrate to the deepest recesses of the garlic, and rob it of its nourishment;—and thick seeded wheat gives it no room to grow, and that is another mean to destroy this hardy nine lived plant.

Though it is not mentioned in the rotation, as not suiting the extensive scale on which land is generally cultivated in Virginia and Maryland, yet if it could be done, it would complete and fill out the circle of this rotation of crops, and would answer a very excellent purpose, by greatly improving the land, to stubble up the wheat field as soon as the wheat is taken off, and sow it down in Rye for a winter hay or grassing. In the hole

with the corn, the Accomac pea should be dropt and cultivated. Corn without beans or peas does not give a sufficiency of shade; this pea or Lilliputian locust, as it has been appropriately called, gives an excellent shade, and draws up or shuts up its leaves of an evening, and admits the dew to reach the soil, and penetrate to the roots of the corn. It takes four years to complete this rotation of crops, and requires that a farm should be laid off into four shifts or divisions; this is the smallest number of divisions admissible, where corn, wheat and clover must be taken into the rotation. It requires the *corn field*, which is sowed in turnips; the *oat field*, which is sowed in clover; the *clover field* and the *wheat field*, which are all growing in the same year. Wheat does not grow so well after corn as in fallow by at least half. I deem it therefore essential to separate them; that is, not to let them succeed each other. It is almost impossible to put in wheat well after corn. The ground after cultivating corn is in hills and in holes, and narrow lands; and unless the stalks are taken up, you can by no ploughings or harrowings remedy that unsightly destructive appearance. Besides, the land is greatly exhausted after a corn crop, and requires a manuring or ameliorating crop, to enable another grain crop to flourish. On no land it answers well, and on most land it is destructive. Exhausters succeeding exhausters, is the cause of so much fine land in Virginia and Maryland being almost ruined, without having yielded half the produce they might have been made to yield: indeed, if I was to say one fifth of the produce they might have been made to yield, I should not say too much. It is this exhausting system that has compelled so many to fly beyond the mountains, and has converted the most convenient, the most beautiful country, I mean the Chesapeake coast of Virginia and Maryland, into an almost tenantless waste. All that country possessed a soil, originally excellent, that has done prodigies under two hundred years of indolent, savage cultivation. The rotation of crops here detailed is calculated to be introduced into

that country, without enfringing very much upon old prejudices and habits; at the same time that it is reconcilable to the most improved modern modes of farming. It blends, with a due rotation of amelioration and exhausters, a very great saving of labor; it keeps the ground always clean and free from weeds, and stirred every year, which I conceive very important to good cultivation: without one ploughing a year, the rains and cattle will so settle and trample the ground as to make it difficult for roots to extend themselves. It is a folly to talk of suffering land to rest; it wants no rest—nature never intended it to rest; the more it is stirred, the better it will produce, with a proper rotation of crops. In this rotation, each crop prepares the ground for the one that is to succeed, and leaves it clean and in nice order, and loses no labor; every ploughing is followed by a seeding, and only one ploughing and one harrowing is requisite to prepare the land for seeding of oats; the same only for wheat. Both the oats and the wheat must be harrowed in after seeding, which in all, makes two ploughings and four harrowings for two crops. I defy any one to shew a rotation of crops in which Indian corn is to be cultivated, better adapted than this to the saving of labor, to the destruction of garlic, to the habits of the Virginians and Marylanders, and at the same time to improve the land and give abundance of winter food.

A ST. MARY'S FARMER.

From the Farmer's Magazine.

ON PICKLING SEED WHEAT.

Sir,

The utility of pickling wheat, meant to be used for seed, and the benefit derived from that preparatory process, have been long and generally acknowledged by the great body of practical agriculturists in this island. At different times individuals, chiefly of that class characterized as philosophical and chymical agriculturists,

have appeared to doubt, and in some instances to deny, the utility of pickling; because they would not comprehend how, and in what way, that process prevented the crop from being smutted. To be sure, it is a difficult matter to explain the mode and manner in which pickle operates upon the seed plant, as, at the best the operation can only be guessed at; and should these gentlemen remain sceptical till that secret is revealed, I apprehend they will long continue unbelievers. Were they to be satisfied with facts gathered in the school of experience, and, in some instances, purchased at a high price, their doubts, however, might soon be removed. One fact with a practical agriculturist has more weight than a hundred reasons. It is by the effects that follow the use of lime and dung that the virtue of these articles can be sufficiently ascertained; and it is by the effect of pickling, and the unhappy consequences which daily follow the neglect of it, that we are enabled to astertain the utility of that process, fully as well as if the curtains of nature were withdrawn, and the *modus operandi* completely disclosed.

I am led to make these remarks from perusing an essay in Dr. Dickson's Agricultural Magazine for November last, which contains a harmless attack upon one of your correspondents, with some small wit against those who support the pickling system. Dr. Dickson I consider as a sensible man, and possessing a larger stock of prudence than to make a direct attack upon your work; though, on the other hand, he does not seem to feel any objection, when galloping past your door, to fire a pistol through the window.

In my early years, when farming was not more familiar to me than it is to Dr. Dickson or his correspondent, I had contracted opinions something very near akin to those entertained by these gentlemen, and, like them, was in the habit of laughing at the folly of my neighbors who took the trouble of pickling their wheat. I used to characterize pickling as a branch of the quack system, and with great confidence inquired of those who

differed with me, how a drop of urine or water mixed with salt, could be capable of preventing wheat from being smutted. Fully satisfied with the correctness of my principles, I acted accordingly, and persisted in their rectitude, till I had not a sound field of wheat upon my farm. The result served to open my eyes, though you may be satisfied that I paid dearly for the operation. I then imitated the practice of those whom I had formerly considered as less enlightened, and can with confidence maintain, that since I regularly used stale urine as a pickle, and saturated the wet grain with hot lime, I have rarely ever found a smutted head of wheat in any one of my fields. This system I have sedulously followed for twenty five years, and in that period have sowed wheat to an extent not much exceeded by any farmer in the island.

Having stated what happened in my own case, I shall briefly detail what occurred upon a farm in my neighborhood, which I had occasion to find out when employed upon the premises as an arbiter. The outgoing tenant, who probably was one of Dr. Dickson's disciples, had sown the whole of his wheat fields with dry seed. The farm was afterwards let to another tenant, who to procure immediate entry, agreed to pay for labour, manure, &c. and the amount of these articles was left to be settled by arbiters mutually chosen. It fell to my lot to be one of these arbiters; and the business was soon dispatched. Before harvest, it was discovered that every field was more or less smutted; and though the old tenant, strictly speaking, was not liable on that account, it was judged proper to examine the fields, and ascertain the extent of the damage. This the arbiters did in the only way in which it could be ascertained. They employed a careful person to walk across every field, and to cut a handful every six ridges, which when brought out, was examined by them, and the number of sound and diseased heads were carefully marked. The result was, that upon no field the number of smutted heads was less than ten in the hundred; upon some of them forty

and fifty; and in one not fewer than seventy. Taking an average of the whole, the loss exceeded one third of the crop, laying no stress upon the injury done by the smut to the grain that was otherwise sound. This is a correct state of that unfortunate business; and having given it, permit me to offer one or two passing observations.

In the first place, when the loss from smut is so great, why will a single agriculturist be so fool hardy as to run any risk, seeing it may be completely avoided by pickling the grain that is used for seed? I by no means question, that sound grain will not be procured from unpickled seed, under certain circumstances. Wheat does not smut in a single season, no more than potatoes procreated from sound seed become curled when planted a second time. Wheat completely pickled in one year, probably will not be smutted in the second year, at least to no more than an inconsiderable degree; but, persist with using the same seed, in a dry state, and the consequences are cetain to be fatal. But why run the smallest risk? Pickling can be completely executed at six pence per acre; and does this trifling expense (laying no stress upon the disgrace) bear any affinity to the loss which arises from a smutted crop? Certainly not. The premium is but a trifle, when compared with the immensity of the benefit.

In the second place, I am at a loss in what light an agricultural publication should be considered, wherein the useful and necessary process I am speaking of, is treated with disregard, nay, rather, with contempt. The only favorable excuses that can be urged are, that its author is ignorant of the practice of husbandry; that he is not competent to judge of the merits of the most useful practice which husbandmen execute; and that he is rather to be sympathized with, than blamed, for occupying a station difficult to be filled by any one unacquainted with practical husbandry. I admit the force of these excuses; and knowing that you would not willingly allow me to extend my remarks upon a hostile publication

to a greater length, I beg leave to add, that I am, at all times, your friend and servant. ARATOR.

Appendix to SIR JOHN SINCLAIR'*s Essay regarding Cattle.*

(See our last Number.)

On the different Kinds of Cattle Farms.

Cattle farms may be classed under the following heads: 1. Breeding farms. 2. Dairy farms. 3 Grazing farms. 4. Suckling farms. And, 5, farms where cattle are worked. A few cursory observations on each, is all that the limits of this paper will admit of.

1. *Breeding Farms.*—In breeding cattle, it is proper, (if the size of the farm will permit the rule being observed) to separate the different ages, and to graze them, as much as possible, in distinct pastures; as the older ones have a jealousy of the younger, driving them from the best grass, and sometimes doing them a material injury.

Bulls will in general retain their vigour till they are twelve or fourteen years old, and there are instances of their being kept till they are even nineteen years, but they are certainly in their prime from three to six. They ought to be kept in one field, which prevents their rambling; and the cows should be brought to them. But it is still a better plan to work the bulls with the oxen, as the owner has thereby the profit of their labour, and all risk of their doing mischief is prevented.

Mr. Bakewell used to put off sending his heifers to the bull till three years old, but his cows often missed calf, which might be owing to that circumstance. It is better, therefore, to send them to the bull at two years old, and some recommend strongly even an earlier period*. In the northern counties, they wish their cows

* It is said that young cows, as early as even one year old, might be sent to the bull. If this would not stint their growth, (which good feeding might obviate,) it might be adopted in particular cases, where the dairy was an object, but certainly ought not to be a general practice.

to calve when the grass is abundant. This, it is supposed, opens their milk vessels, and is a great mean of rendering them ever after good milchers; which is not the case, unless nature is early made to have a tendency to that species of secretion. It has been found a good plan to give the whole of the milk a young cow yields to the calf, which she readily does, and thus gets into a good habit of milking.

Bull calves * are generally nursed by the mother, but sometimes by hand. It is said that Mr. Bakewell had two nurses for some of his favourite stock. On the other hand, in the north of England, where rearing a number of cattle is the object, they sometimes put two calves to one cow. Hay-tea † is sometimes given them, and eggs in spring, when they are cheap; but linseed is the best substitute for milk. The calves are served with linseed twice a day, at the rate of an English pint of linseed, and twelve quarts of milk, for twelve calves, which with thirty-six quarts of water, is boiled into a jelly; a gallon of this soup is given to each calf twice a day. The linseed should be crushed.

II. *Dairy Farms*—The proper management of the dairy is a most important source of profit, in many parts of the kingdom, and perhaps ought to be extended to

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* It has been remarked, that if a cow goes beyond her time, she generally produces a male calf.

† The following receipt for making hay-tea has been tried with success in the north of England. Take a large handful, or about 1 lb. of red-clover hay, well got in, and six English quarts of clear spring water; boil the hay among the water, until it is reduced to four quarts, then take out the hay, and mix one pound of barley, oat, or bean-meal, amongst a little water: put it into the pot, or cauldron, whilst it is boiling; keep the whole constantly stirring, until it is boiled and thickened. Let it cool, to be luke-warm; then give it to the calf, adding as much whey as will make a sufficient meal. This is a cheap mode of rearing calves, and may answer the purpose as well as more costly ingredients. In this way the valuable article of milk may be saved for other purposes.

many districts where it is at present but little known*. In the neighbourhood of a town, the sale of the milk is, probably, the great object in keeping cows; but in the more remote parts of the country, if calves are not fattened, cheese and butter being so easily preserved and transported are the proper articles to attend to, with the view of domestic consumption, or of foreign export.

The points to be principally attended to by any person who sets up a dairy, are, 1 To get a proper breed of milch cows. 2. To procure an attentive and skilful dairy maid; as the whole success of the undertaking must depend on her good conduct†. And, 3. To ascertain whether the milk produced by the pastures in his possession, is best calculated for making butter or cheese.

The proper hours of milking, and how often per day cows ought to be milked, are points of considerable importance It is certain that some cows require being milked thrice a day, in the prime of the season; but, as a general rule, it seems to be most adviseable to milk but twice a day, at six o'clock in the morning, and six at night. In this way a cow has twelve hours each time to graze, or feed, and to prepare the milk for the pail. When they are milked thrice a day, it occasions much

* I regret much to hear, that in many parts of England the advantages of the dairy are not so well known as they ought to be; and that the lower orders of the people cannot get a little milk, or butter milk for their children. I wish much to call the attention of the liberal and public spirited country gentlemen, to a circumstance so important to so numerous a class of the community. The best remedies are, to have small dairy farms in the neighbourhood of all villages, bound to furnish the inhabitants with milk, at a moderate price; and if the Irish mode were adopted by the English farmers, of churning all the milk, instead of the cream alone, such a supply of excellent butter milk would be procured as would be of infinite service to their neighbourhood.

† Good dairy maids are so extremely scarce in many parts of the kingdom, that it would be proper to encourage them, by premiums at present applied for purposes much less essential.

unnecessary trouble to the dairy maids, not only in going to the cows, but also in preparing their vessels for holding the milk, unless they have an extraordinary number of them: it also puts the cows from grazing, and diminishes their time for rest*. The dairy-maid should take special care to treat the cows with as much gentleness and kindness as possible, to prevent their taking any dislike to her, which would hinder their milking well; and should milk them completely, by which cows are prevented from going so soon dry, as otherwise may be apprehended.

The usual process of making butter and cheese, and the purposes to which the whey may be applied, are so well known, that it is unnecessary here to describe them†.

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* Since this was written, I have perused Dr. Anderson's Recreations, vol. iii. p. 248, 249, &c. in which there are a number of valuable hints on the subject of the dairy, and in particular regarding the times of milking, respecting which there seems to be a degree of doubt, which nothing but careful and judicious experiments can properly remove.

† The following particulars may be worth preserving in a note. Though fresh butter must be made with great care, yet salt butter requires, if possible, still greater attention, as it must be calculated for preservation; and though salt is indispensable for that purpose, yet if the butter is properly prepared, and the salt properly mixed, the quantity required is not considerable. It is said that the butter made in the months of May, June, July, and August, is the fittest for salting; and that butter made in the latter part of the season will not take salt so well. In regard to cheese, in order to make it rich, they sometimes mix fine tallow with it, and sometimes butter: the latter mode is practised in the northern parts of Scotland. Sometimes also, farmers, in the northern parts of England, make what are called egg cheeses, which are famous for toasting. After the curd is thoroughly prepared, they make this cheese, by putting five yolks of eggs to every pound of curd, mixing the whole properly, and putting it into the cheese-press as usual. As to whey, it is sometimes used for making butter, sometimes for feeding swines or calves, and sometimes prepared in the north of England in the following manner. The whey is put into a kettle or pot

Cows are not at their prime state for milk until they are six or seven years old, and they will remain so until they are twelve; but as the older they grow the worse they will fatten, some farmers begin to feed them, when they are from eight to ten, even though they are good milchers. The propriety of this system may, however, be questioned. Whilst the value of the udder, in a good dairy-cow, exceeds the value of the cow, her pasture, and the necessary attendance, she may be kept to any age. The teeth, not the stomach, fail; and therefore, as long as a cow milks well, she ought to be kept, as she can always be fattened by soft meat.

It has been remarked that some cows will give a large quantity of milk, yet will yield little or no butter; and that a mixture of it will even prevent the cream of the other cows from churning This is owing either to the animal being in an unhealthy state, or to a predilection for particular kinds of herbage, not favourable to the production of good milk.

III. *Grazing Farms.* Some intelligent graziers recommend the following mode for feeding and fattening cattle. Suppose there are four inclosures, of from six to ten acres each, one of them should be kept quite free from stock till the grass has got up; and then the prime or fattening cattle should be put into it, that they may get the best of the food; the second best should then follow; and the young store after all; making the whole feed over the inclosures in succession, as follows:

1. Inclosure. Free from stock, till ready for the best cattle.

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on a smartish fire, and when it is near boiling, some butter-milk is put into it, which is skimmed off as soon as any curd seems to be formed on the top of the whey, some butter-milk is then again put in, and so on, from time to time, as long as any curds will arise. This substance is called whey curds, may be eat with cream or milk, and is not unpalatable diet. The whey that remains from this curd is commonly called whig, and, when kept until it is sour, and two or three sprigs of mint put into it, many are of opinion that it makes a pleasant liquor, particularly in hot weather.

2 Inclosure. For the best cattle, till sent to No. 1.
3 Ditto. For the second best, till sent to No. 2.
4. Ditto. For the young cattle, till sent to No. 3.

No. 4 is then kept free from stock till the grass gets up, and it is ready for the prime cattle.

The proper size of inclosures has never yet been ascertained by experiment; probably from ten to thirty acres the best, but the size should be various, as small ones are best in winter, and large ones in summer, and smaller ones are best calculated for grass, and large ones for corn. Mr. Bakewell was a friend to small enclosures. Probably the best plan to adopt is, to feed cattle entirely in the house, or *soiling* them, as it is technically called In that case small inclosures must be preferred, as the shelter they afford is extremely favourable to the growth of herbage.

In grazing cattle in the fields, two practices are recommended. 1. When hay is given them, or straw, instead of throwing it on the ground, which tempts the stronger to drive away, and even to gore and hurt the weaker; it is better to place it in small square pailings, according to the number of cattle in the field, so that each may have a distinct side to go to, without interfering with his neighbours. 2. When cattle are kept out during winter, it is a useful practice to rub some tar at the root of the horn, which hinders any wet from getting between the root and the skin, and it is said contributes to preserve the health of the animal, and to prevent various diseases to which it may otherwise be liable.

The larger a bullock is, he must take the more food to support him. It is desirable to change his food often, and to give him frequently, but little at a time, which makes him more eager to eat After his kidnies are covered with fat he will take less meat every week. It is better therefore to ascertain the quantity he eats, by the week than by the day.

Fatting cattle to be sold immediately from the farmer's house, and not sent to market, should be kept moderately warm. If kept too hot, it makes them perspire,

and their skins to itch: this vexes them, and they rub themselves against any wall or post within their reach, which is much against quick feeding. Currying and combing them are useful practices; and washing them, at least once a week, is of great service. Bleeding is now exploded, as an old and unnecessary practice.

IV. *Suckling Farms.* In some parts of the kingdom, the whole attention of the farmer is dedicated to suckling, or, in other words, to feeding calves for supplying the market with veal. In Essex this plan is reckoned more profitable than the dairy, and next to grazing. But the profit there must depend much upon the immediate neighbourhood of that country to so great and certain a market as London.

The particulars connected with this branch of rural economy will, it is probable, be fully detailed in the Improved Agricultural Survey of Essex, in so far as regards that and the neighbouring districts. But as the mode of suckling adopted in some parts of Scotland is extremely different, it may not be improper to give a short account of it in this place.

As soon as the calf is dropped, it is put into a box made of coarse boards, four and a half or five feet long, and four, or four and a quarter feet high, and about two feet wide, according to the size of the calf. The boards are not put so close but that a sufficient quantity of air is admitted; light is, however, carefully excluded, and the box has a cover for that purpose*. The box stands on four feet, which at one end are four inches high, but at the other only two inches, and, as there are holes at the bottom, all wetness is drained off. The bottom is also covered with straw or hay, which is changed twice a week. For seven or eight days milk is cautiously given, for, unless a calf is fed moderately at first, it is apt to

* All animals when fattening ought to be excluded from light as much as possible, as the best and safest mode of keeping them quiet; and infinitely preferable to soporific drugs, which are commonly given them. Exclusion from light is practised by those who fatten poultry for the London market with great success.

take a loathing to its food It shou d be bled in about ten days, and afterwards as much milk given it, fresh from the cow, either twice or thrice a day, as it will take. The bleeding should be repeated once a week; and at all times when a calf loaths his milk, and does not feed well, bleeding ought to be repeated. These frequent bleedings prevent diseases from plethora, to which calves are subject, even when not fed so high, and still more so when they are. A large piece of chalk should be hung up in the box, which the calf will lick occasionally: this contributes nothing to the whiteness of the veal, but it amuses the animal, and corrects that acidity in the stomach which might otherwise be engendered, and which certainly often takes place. A cow calf is reckoned the best for veal: if a bull calf is suckled, he ought to be cut when about a week old, otherwise the veal will neither be so good nor so white. By this mode of treatment calves are kept clean, quiet, warm, and dry; the veal they furnish is excellent, and they are soon ready for market*; and, on the whole, it seems to be preferable to the practice of stupifying them with spirits, or with laudanum, so common in other places, where a different system is pursued.

V. *Farms where Cattle are worked.* The supposed necessity of beginning to feed oxen at an early age, is a great objection to their being generally used, as they are hardly trained properly to work before it is thought necessary to fatten them, after which they do very little work: but, in consequence of the improved mode of fattening by oil-cake, &c. there is no difficulty to fatten oxen, even at twelve years of age, which is a material circumstance in their favour.

It is thought best to begin to break in oxen at three years old, and to give them full work at four. In the northern counties of England, four oxen are commonly

* Statistical Account of Scotland, vol. viii. p. 199, vol. ix. p. 384, and, in particular, vol. xix. p. 495, where an account of this mode is given, by a respectable country gentleman, Mr. Paterson, of Castle-Huntly.

used, the two foremost, in harness, the other two in yokes. In Scotland it is not uncommon to work two oxen in harness, and without a driver. They are sometimes worked till they are from eight to ten, and even twelve years of age: but it is generally considered to be more profitable to begin to feed them earlier.

Some people prefer free martins* and spayed heifers for working to oxen. They are found very strong and active, and it is said they will, with equal feeding, work nearly as well as a horse.

It is a remark of the late Sir Charles Turner, that the advantage of working oxen depended much upon the breed; and he preferred much the Lancashire sort, as they were not only active and hardy, but lengthy in the carcase, which enable them to go four inches farther each step than almost any other kind.

They have much experience in working oxen in the East Indies; for, besides what are used in husbandry, great numbers attend the armies on all expeditions, for the purpose of dragging the artillery, and conveying ammunition, baggage, and provisions. It is observed in the East, that small oxen will travel much faster than large ones, and will bear more fatigue. Light oxen, with little food, will continue to work until they fall down, but the heavy ones will do nothing unless they are well fed. The heavy ones are stronger, but they are generally slow and surly, and can hardly be made to exert themselves on any occasion. It is also remarked in the East, that oxen ought never to be worked when their bellies are full, nor should water be given them, either on a march, or when they are at work, if the weather is hot.

I cannot conclude these cursory hints, without adverting to a most interesting subject, namely, the diseases of cattle, and the means of their prevention or cure, inquiries regarding which are so well entitled to public attention

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* Free martins are cow calves cast at the same time with bull calves, which are never known to breed.

and encouragement, instead of being left, as hitherto has been the case, to the desultory exertions of private individuals. The stock of domestic animals in a country, is one of the principal sources of its wealth; and every circumstance that materially tends to diminish their number, or to decrease their value, must be attended with much public loss. Animals are in general subjected to much fewer disorders than men; and as their diseases are of a much less complicated nature, they are consequently much easier relieved. There can be little doubt, therefore, that very moderate public encouragement would be the means of discovering those remedies that would be found the most effectual for their removal. Is it possible for the public money to be better bestowed? It is said that a very effectual remedy for the rot in sheep* has been discovered in Holland, yet no pains are taken to procure a knowledge of it in this country, though that disease has occasioned the loss of many millions of property to the subjects of Great Britain within these fifty years past. If that loss had not been sustained, would not the wealth of the country have been considerably augmented, its public revenue consequently increased, and of course great quantities of human food have been preserved from destruction, which have perished, to the manifest injury of the nation!

[An obliging friend (says the Albany Balance) has furnished us with the following communication, on a subject interesting to the Farmers, in some parts of this State.]

UNIVERSITY OF VERMONT,

Dear Sir, *Burlington, 28th June,* 1810.

Your favor, dated "Albany, (N. Y.) 6 mo. 8, 1810," has just come to hand by mail. You request what in-

* An intelligent correspondent informs me, that it is a custom with some farmers to pasture their sheep on ground abounding with broom, for several days, when the broom is in blossom, which they find from experience prevents the sheep so pastured from being infected with the rot for that season.

formation I possess concerning the plant which is called the "*Canadian Thistle.*" I have no evidence that the name is significant of its origin.—It is to be found in every part of Vermont; and took possession of the lands before the oldest of the present inhabitants. The plant is not yet in bloom and maturity. I had cut off a head of it, in order to give you a Botanical description of it. But its parts, necessary to a description on Linnæan principles, are not yet sufficiently ripened and expanded. Something further may be done, should you continue to desire it, whenever the sexual and seminal parts shall be *matured*

In the mean time let me allay the fears and mitigate the complaints of your New York agriculturists. I have myself observed the thistle for *eighteen* years; and can speak certain things from knowledge, derived from my own experience. The plant is in itself unpleasant, armed at all points and threatening hostility to every being, who is bold enough to invade it. Its right to the soil is founded on possession immemorial. The Vermont farmers, however, possessing physical power, forgot its imprescriptible rights. They united all forces to exterminate it, "*vi et armis.*" In a very early period of our existence as a State, the Legislature of Vermont, passed an act, not that it should not grow any more, but that every landholder should cause the thistles to be *mown* before they were ripe and had any power to disperse the seed to any greater extent. But notwithstanding the "*veto*" of legislation and the "*caveat*" of spirited agriculturists, *nature* said they should grow.—As if they shared in the obstinacy of mankind amidst resistance, they *increased* the more beneath the severest discipline of the hoe, plough, harrow, legislation, and even the fire. The farmers absolutely despaired in the unequal contest; since they have done nothing, the dreaded enemy has seemed to retire; and the thistles in this part of the world, have evidently and greatly diminished.

We seldom know the extent of the blessings we enjoy: Some of our most experienced farmers, who labor-

ed with the greatest zeal to exterminate them, now see in them, not enemies, but friends, in a rough dress, indeed, but still salutary. Several advantages are obvious. 1.—They enrich land, serving as a valuable manure. 2.—They keep the soil loose 3.—They serve as food for cattle The stalks of clover and other large grasses will be left often uneaten in a yard, but the thistle never escaped, being always the object of desire to some kind of cattle, 4.—It is conceived to be healthy, a remedy or a preventive of the diseases common to the brute creation. One of the most experienced farmers in Vermont has lately expressed to me his wishes for the increase of this plant on his farm, where he once tried long and ardently to destroy it; but he now has fears that it will ere long totally disappear from this section of the country.

Mowing it down before its seeds are ripe will not prove a sure prevention of its growth. The cultition of land by hoeing and ploughing serves to extend and facilitate its perfection. Sowing land with the ranker grasses will soon choak and destroy it. But here, time seems to threaten its everlasting banishment, very contrary to all former expectations.

Nature has, however, made large provision to ensure its permanency, two ways. 1.—By propagation from its root. This runs into the ground to a great depth. Some say, it extends twelve feet beneath the surface. I have seen it grow well from the root left in cellars dug six feet deep from the top of the soil. Any part of a root will be enough to become the embryo of a new plant. 2.—By its seeds. Nature ripens these about two feet above the ground, in a fine situation, elevated for easy dispersion. It is one of those composite flowers, which opens its pericarpium, when the seeds are ripe. These numerous seeds are endowed with wings, downy appendages, finely globular, which enable it to float in the air, and very generously waft the prolific race to distant fields which are not its own. It is the swelling of its downy pinions which overcomes the resistance of its

coats, opening a door for the eager seed to escape from the prison, where its further confinement would prove useless to all the purposes of vegetable life.—After all nature's ardent care to give this plant "*a local habitation and a name*," her success in Vermont does not seem to be adequate to her efforts; and threatens nothing inauspicious to the industrious cultivator of the varied field.

I am happy to see you amidst your literary labors so engaged to promote the first interest of our beloved country, agriculture. However hasty the present letter, you may make any use you please of my observations on this subject, which may tend to diminish the fears and complaints respecting the Canada Thistle.

I am, dear Sir, your friend and
Most obedient servant,
DANIEL C. SANDERS.

THE CONSTITUTION
OF THE SOCIETY OF ARTISTS OF THE UNITED STATES,

ESTABLISHED AT PHILADELPHIA, MAY, 1810,

PREAMBLE.

In the infancy of a country, the energies and talents of its inhabitants, are confined to the exercise of those arts, which are immediately connected with the production and acquirement of the necessaries of life; to the procuring of food, of raiment, and of shelter; to the cultivation of the soil, to the establishment of the coarser manufactures, and to the erection of substantial, but rude buildings. With the progress of society, wealth, and consequently leisure is acquired; attention is then paid to convenience and comfort, and in process of time, to ornament. It is thus, that the fine arts succeed those that are merely useful, and thus, a combination is formed, uniting beauty with strength, and elegance with utility.

Such at least has been the case in the United States. Our ancestors, on their arrival on this vast and then uncultivated continent, found constant employment in providing against the calls of hunger, the inclemencies of the weather, and the attacks of the brave, but ferocious aboriginal nations. Increase of numbers brought safety; and agriculture and commerce soon flourished. The various improvements in the arts, connected with navigation and the culture of the soil, bore ample testimony to the industry and ingenuity of our countrymen. Few of them however, had, until the close of the last century, sufficient leisure to attend to the cultivation of the fine arts. Twenty years ago, scarcely a single specimen of American taste, which was worthy of attention, could be produced. Painting was indeed an exception, but even in that branch of the fine arts, American genius was dependent upon European patronage. Since that period, the change has been wonderful. But, although the progress has been rapid, we are yet far behind other nations. Sculpture and architecture still languish. Even those arts, in which improvement is most apparent, owe their present advancement to the solitary exertions of individuals. Much indeed has been done, but much remains to do. Some method seems wanting, to encourage exertion, to combine talents, to draw excellence from obscurity, and to display acquirements to the best advantage. To these ends, nothing it is believed, would contribute more than the establishment of a society of artists and amateurs, founded on liberal principles. Such a society is now formed under the title of "THE SOCIETY OF ARTISTS OF THE UNITED STATES." Into this society, it is intended to admit as members artists and amateurs in all the branches of the fine arts.

The immediate objects of this association are, to teach the elementary principles of the arts; to encourage emulation by a comparison and communication of ideas; to correct and improve the public taste by stated exhibitions; and to raise a fund for the relief of such members as may be rendered incapable of following their

respective professions, or in case of their death, to make some provision for their families.

To carry these objects into effect, it is, in the first instance, proposed to select, as soon as the society is organised, proper persons to teach the first elements of the arts, and particularly to establish a school for drawing in all its various branches. The connection between drawing and all the fine arts is obvious. It is the very soul of painting and engraving, and it is indispensable to sculpture and architecture. For how can an artist judge of effects, unless he can produce a correct delineation of his design? It is, in fact, as necessary to the arts, as writing is to the sciences. Independently of its importance to artists, a school for drawing, in which the youth of both sexes might be instructed at a moderate expense, would be a powerful means of promoting a correct taste. Young persons in the habit of copying works of the best masters, will naturally acquire an accurate perception of their various excellencies. Thus the judgment will be matured, the taste improved, and a love for the fine arts gradually extended. Nor is this unimportant. Much of the moral character of individuals, and consequently of the nation, depends upon the amusements which fill up the hours of leisure. Instances are very rare of fine taste united to depravity of conduct. A young person, possessed of the resources furnished by the arts, has fewer temptations to vice, than one who after the hours of business or of study, is obliged to look abroad for recreation. But drawing may be useful not as an innocent employment merely. Unforeseen events may reduce the most affluent to poverty, and a talent for drawing may become not only an elegant accomplishment, but a means of subsistence. Many of the unfortunate victims to the French revolution, have obtained at least temporary relief from want by the exercise of that art, which formed one of the amusements of their happier days.

In addition to the drawing school, it is proposed to establish an annual exhibition of the works of art. It is not

intended to confine, in the commencement, this exhibition to original works, nor to those of American artists. Artists and amateurs, who have in their collections, works of the foreign schools, or approved copies, or even good drawings and engravings of them, will be invited to exhibit them. It is believed, that such an exhibition will gradually pave the way for one of original American productions; that it will excite a spirit of just criticism; and that it will soon become a source of public gratification, as well as of improvement of public taste.

From the drawing school and annual exhibitions considerable profits will probably arise. To these profits, it is proposed to add contributions of the members of the society. These will constitute a fund for the payment of the expences, and for carrying into effect the charitable views of the association.

A society, founded on these principles, will, it is presumed, meet the cordial approbation and support of a great majority of the artists and amateurs of the United States. It is believed, that from its nature, it will not be liable to those unfortunate schisms which have too often disturbed, and frequently destroyed, institutions established for the improvement of the fine arts.

In order, therefore, to carry the foregoing into effect, We the subscribers have agreed to associate and form ourselves into a Society, and have adopted the following articles as the constitution thereof.

CONSITUTION.

ARTICLE I.

The society shall be known by the name of "THE SOCIETY OF ARTISTS OF THE UNITED STATES"

ARTICLE II

The society shall consist of one hundred professional members, and fifty associate amateurs.

Professional members are to be divided into two classes; the first class shall be limited to forty, who are to be selected and appointed by a committee of associate

amateurs, and called "Fellows of the Society," the remaining sixty to be called "Associate Artists."

ARTICLE III.

Artists of the following description are eligible to membership—viz. Historical, landscape, portrait, natural history, botanical, and architectural painters; architects, sculptors, and modellors; historical, landscape, portrait, natural history, botanical, and architectural engravers; and engravers of medals, and coins; ornamental painters, writing and map engravers; engravers in wood and metals for printing; professors of penmanship, and sculptors of ornament.

ARTICLE IV.

Candidates for membership may reside in any part of the United States, but no person shall be considered as a candidate unless recommended in writing by at least two members.

No candidate can be elected until the next stated meeting after his nomination.

ARTICLE V.

The society by a concurring vote of two thirds of the members present at a special meeting, may confer the title of honorary member on any foreign artist or person of distinguished merit in this, or in any other country.

ARTICLE VI.

The stated meetings of the society shall be on the first Wednesday of every month: the stated meetings in February, May, August, and November shall be called quarterly meetings.

A quorum of the society shall consist of thirteen members. Every member of the society may attend the meetings, take part in the debates, and vote on all questions before the society.

ARTICLE VII.

Every member shall pay five dollars on his admission to the society, and one dollar quarterly afterwards, with a privilege of being released from all future quarterly contributions by the payment of fifty dollars.

ARTICLE VIII.

That the President of the United States be the "patron of this institution.

ARTICLE IX.

Members of the first class have the sole direction of the schools and exhibitions.

The president, vice-president, treasurer, secretary, and such other officers and committees, as may be judged necessary for the government of the society, shall be elected from the first class by the society at large. They shall be elected by ballot, at the stated meetings in January every year.

The election shall be conducted in such manner as the by-laws may provide.

Vacancies in any of the offices occasioned by death, resignation or otherwise, shall be supplied at the stated meeting next after such vacancy may happen.

The duties of the several officers shall be ascertained by the by-laws

The associate artists, and associate amateurs, shall have the power at all times to inspect, and direct the finances of the society, in common with artists of the first class.

ARTICLE X.

Schools for the instruction of pupils in the various branches of the fine arts, shall be opened as soon as practicable.—Suitable teachers shall be procured, and students shall be admitted on such terms as may be provided by the by-laws.

A number of students not exceeding twenty-five, shall be admitted as foundation students, in the following manner:—Every associate amateur shall have the privilege of nominating as a candidate a young person not less than twelve years of age. These nominations shall form a list, from which the foundation students shall be selected in such a manner as the by laws may point out. Foundation students shall be instructed free of expence, and continue in their situation at the discretion of the society.

ARTICLE XI.

There shall be an annual exhibition, in which all artists of merit shall be permited (under such regulations as may be expressed in the by-laws) to exhibit their works. The works of foreign artists, and masters, may also be exhibited under the same regulations, until it shall be otherwise ordered by the society.

All students in the schools of the society, shall be admitted gratis to each exhibition four times

Terms of admission, and time of commencement, and continuance of the exhibition, and every thing concerning the regulation and superintendence, shall be provided for in the by-laws.

ARTICLE XII.

The contributions of the members, and profits arising from schools and exhibitions, shall, after the payment of the expenses of the society, be invested in the purchase of public stock, or be placed at interest on sufficient security, accordingly as the society at a quarterly meeting may determine. Reservations may, however, be made to meet contingent demands and charitable disbursements.

Any member not having completed his payments who shall refuse or neglect, for twelve months to pay his quarterly contribution, shall, after due notice is given, no longer be considered as a member, and shall forfeit all his rights in the society

Such sums shall be given to distressed artists, or for the relief of their widows and families, as the state of the funds will admit, and as the society may from time to time direct; a preference being always given to distressed members of the society, and their families

As soon as the funds of the society are properly invested, a portion shall be set apart as a pension fund; this pension fund shall be appropriated to the payment of pensions to the professional members and their widows, in such manner as the by-laws may point out.

ARTICLE XIII.

The officers of the society, and persons employed by

them as teachers, &c. shall receive such salaries for their services as shall be determined by the by-laws.

ARTICLE XIV

No article in this constitution can be altered but at an annual meeting, giving previous notice, of at least one quarterly meeting, and then only by a majority of two-thirds of the members assembled, but by-laws not in contravention of the constitution may be passed by a majority at any stated or other meeting.

Method of purifying Honey and Melasses so that they shall serve for the same Uses as Sugar in most domestic Preparations of Food, &c. By. Mr. LOWITZ.

From the TRANSACTIONS of the ŒCONOMICAL SOCIETY of ST. PETERSBURGH.

Having, after many painful experiments, ascertained that honey is not capable of being profitably reduced into the state of perfect sugar, in ordinary manufacture; I cannot, however, deem the pains I took in that investigation to be entirely lost; since it enables me to communicate a method for preparing honey, without waste, if not into sugar, yet at least into a state in which it shall serve equally well as sugar, for every common domestic use.

Into a sufficiently wide kettle, put 4 lb. of common brown honey, with as many quarts of water. Add to this mixture half a pound of charcoal, that has been previously well pulverized, and freed, by sifting, from any ashes, or other extraneous matter that might adhere to it Expose the vessel to the heat of a common fire; and leave the matters to boil together till they shall throw up a large proportion of impurities to the surface*. At the end of a quarter or half an hour, let the whole be strained through a clean linen bag. It is not necessary that the liquor which passes through the bag should be per-

* The author does not direct the impurities which rise to the top to be skimmed off But, it is obvious, that they ought to be so skimmed, and to be put aside, in a proper vessel, for the second boiling.

fectly clear. The mixture of honey and charcoal, which remains on the strainer, must be put back into the kettle; with the addition of two quarts of water, again boiled; then strained off, till there be no honey left with the charcoal on the strainer; and mixed, at last, with that which passed through the strainer before. The whole quantity of honey and water pressed through the strainer, is now to be mixed, a second time, with charcoal, to the quantity of two or three pounds. This mixture must be boiled, over a strong fire, to the consistency of a syrup. Fresh water must then be added; and the whole must be left to stand, over night, in the boiler. Next day, let it be again brought to boil; and when it is boiled down to about two quarts, let it be pressed through the strainer. The coaly residue may then be liquefied, with two quarts of fresh water, to its former degree of fluidity. Now for the third and last time, add to the mixture of honey and water, about a quarter of a pound of pulverized charcoal; boil down the mixture to the quantity of one quart; press this through the strainer, taking care that nothing pass which is not perfectly clear; then leave this solution of honey, now entirely free from its peculiar taste and flavour, to evaporate over a very gentle heat, to the codsistency of a syrup. Or, in order to obtain precisely that gentle heat, which is employed in the sugar works, to purify the last remains of the syrup from all extraneous colour, taste, and smell; it may be proper to expose the vessel, containing the honey and water, only to the heat of a water bath, or to present it to the action of the fire, within another larger vessel, containing water, through which the heat may pass to it. Here, also, it must be exposed till the syrup shall have been evaporated to the desired thickness. To ascertain its progress to the proper consistency, take out, from time to time, a few drops into a cold cup. Thus may be obtained, from four pounds of honey, nearly an equal quantity of purified syrup of honey; provided sufficient care be taken to leave none of the honey in mixture with the powdered charcoal that was used in purifying it.

This syrup of honey may be very usefully employed, instead of sugar, to sweeten coffee, and, indeed, all sorts of meats and liquors. It is, however, to be remarked, that this syrup of honey, when it is prepared in any considerable quantity, and is put up in store, ought to be kept, not in close and strait, but in wide and roomy vessels; otherwise it will be apt even in the course of a month, to acquire certain new properties, by which its nature will be greatly altered; it will experience a sort of crystallization, will become granulous, stiff, and of a consistency such as is fit to be cut with a knife. Tea and punch, sweetened with this purified honey, assume an unusual brown colour. I was desirous of finding out some means for remedying this unpleasant circumstance. I succeeded best in the manner following.

Pour upon 1 lb. of the purified honey 2 quarts of water; add 4 oz. of powdered charcoal; boil this mixture for the space of half an hour; then pass it through a linen strainer. Let the coaly matter, which remains on the strainer, be diluted with 2 quarts of fresh water; add this to that which passed through: into the whole put 2 ounces of powdered charcoal. Care must be taken, however, that what was diluted, after being previously pressed in the strainer, be filtered when it is added to the purer liquid.

Let both together be, with the additional charcoal, boiled down to the quantity of exactly two and a half quarts. Then filter this for the last time, and set it aside for use. What remains on the filter may de washed through with 2 or two and a half quarts of more water, and added to the former.

To make tea with this purified and diluted honey, you have only to pour it, in a state of heat sufficient for the infusion, into a tea urn, or kettle; from which you may draw it out for use. The tea made with it will not now differ, in the smallest degree, in either taste or appearance, from that which is made of the best white sugar.

Punch may be also made with the same liquor of purified honey; with this difference, however, that 1 lb of the

diluted honey must, for punch, be boiled down, in the purifying preparation, to 1 and a half quart, in order that it may possess the required sweetness.

This preparation of honey, for use in tea and punch, is greatly recomended by the quickness and facility with which it may be performed. No more, therefore, needs to be prepared at once than will be sufficient for the consumption of three or four days. If an attempt were made to prepare it in larger quantities, and preserve it longer, the liquor would, of course, ferment and undergo an entire change of nature.

This refining of honey would be still more profitable in the more remote parts of Russia, where beehives are very plentiful, but sugar scarce and dear, than here in St. Petersburgh

The dark-brown syrup, or melasses, of the sugar houses, is here sold even cheaper than yellow honey.

I have, therefore made similar trials to purify that melasses. If boiled with powdered charcoal, it may be very easily freed from its peculiar colour, taste, and flavour, and made fit for all the ordinary uses of pure sugar.

INTERNAL IMPROVEMENTS.

The Legislature of Virginia is not unmindful of the natural advantages possessed by the State, for opening a direct channel of intercourse with the western waters; and exertions are making to improve them. The practicability of connecting the waters of James and Kanawa rivers, by canals and locks, has been examined, and the object ascertained to be too arduous and expensive to be met by the present resources of the State. A turnpike road connecting the nearest boatable points of the two rivers, presents the cheapest means of acquiring the object, and if effected, will bring Virginia with superior advantage into the lists of competition for the commerce of the State, and the upper waters of the river Ohio; as James River will then present a direct and easy communication from the Atlantic towards the centre of that State.

TO THE EDITOR OF THE AGRICULTURAL MUSEUM.

SIR,

A desire to contribute, all in my power, to a speedy amelioration of the wool of our country, by introducing the Merino blood among the common sheep, has induced me to send you for publication, if you should deem it worthy of a place in your Museum, a paper I had prepared this summer for the use of some of my friends, who having procured Merino Rams, were anxious to employ them in such a manner, as to obtain their stock, as numerously and as rapidly as possible.

When it is considered, that, although very many of the genuine Merino Sheep, of both sexes, have been lately imported into the United States, their distribution has as yet been but partial, and that by putting our common Ewes to full blood Merino Rams, not only great advantge is gained by the very first cross, both in quantity and quality of wool, but that by continuing to breed, in and in, as it is termed, a large Flock, of the full blood, may be obtained in less time and on much easier terms, than by acquiring, in the first instance, imported Merino Ewes at the prices at which they have been sold, and will probably continue to sell, it certainly is an object of economy, as well of money as of time, with the Farmer, to make such expenditure as he can afford, in the purchase of a Ram, or of Rams, and to build his proposed fine wooled stock on the sheep of the country as a foundation; and economy of money, at least, (taking into view the high cost of the Rams), to obtain from each, every season, as much service in propagation, as can be had without injuring him.

From my own experience and attentive observation, for the last two years, I am entirely satisfied that the ordinary service of a Ram may be doubled, by attending the hints contained in the paper now communicated

A MARYLANDER.

30th August, 1811.

Minutes, founded on experience, as to the means of husbanding the vigour of the Ram, and best enabling him abundantly to propagate his species.

First, the habits and propensities of the sheep, male and female, in this work of nature, are to be understood. In our climate, (that of Virginia and Maryland) the Ewe is inclined to receive the Ram from the 1st of August to the 1st of November; this is the rule; but there are many exceptions—the inclination occurs partially, on the part of the Ewe, at all seasons of the year, when she is not giving suck, and is in good condition; and indeed, there are many instances, when she takes the Ram, with a Lamb at her side. The season at which most Ewes in a flock, with ordinary keep, desire the Ram, is, from the middle of September to the middle of October. It is to be observed also, that, although the Ram will be readily excited, at any season of the year, by the instinctive knowledge of an amorous female in his company, that he is habitually quiet, regardless of the Ewes—and found herding with wethers, or other Rams, at all seasons of the year, except the rutting season, before described; at the approach of which, (towards the end of July) he becomes restive, is disposed to fight, and begins to run as it is termed, or to hunt the Ewes:—and during this period, it is extremely difficult to keep them apart; they, both Ewe and Ram, will traverse extensive tracts, or bound over high fences to get together; thence, great precaution and vigilance should be used, where a particular breed is to be preserved unmixed. The stories told of the impregnation of a flock of fifty or an hundred Ewes by a Ram in one night, are extravagant beyond measure. In the first place, it is against nature As to the female, in a flock of an hundred Ewes, it will be found, on the closest observation during the season, that not more than six or eight are amorously disposed on any given day; and as to the Ram, although his powers are very great in this way, it will be seen on trial, that half a dozen Ewes are quite as many as he is disposed to pay his respects to, in the course of twenty-four hours; and

that even this provision is too great for him, if continued for several days successively. Another error on this subject exists; the general belief seems to be, that a Ram is so fast, and so sure, in his operations, that a single embrace from him suffices, and that he passes rapidly through a flock of expecting females, distributing a single favour to each, and leaving an impregnation for every act of coition—this is not so; let a Ram, in full vigour, be put into a paddock, with half a dozen Ewes, each equally amorous and passive, and he will immediately attach himself to some one, and let the invitations from the rest be what they may, he remains constant to his first choice, till she is satisfied, which will generally be the case, in the course of an hour or two, and after she has received him some five or six times at intervals of from ten to twenty minutes; when he seeks another similarly disposed, and remains her attendant in like manner, and for about the same time. In correction of yet another improper impression, as to these matters, it is requisite to remark, that from every mounting, or leap, on the part of the Ram, there by no means results a coition, sundry accidents and barriers prevent this; although the action, in a case of failure, is very similar to one attended with success, and of as long, or nearly as long duration, yet to an attentive observer, there is a difference; and the act of coition may be distinguished, not only by the motion of the male, at the instant of junction, but by his manner immediately on quitting the embrace, it has been wittily said, *post coitum omne animal triste est præter Gallum*; this general remark certainly applies to the Ram.

As to the Ewe, she comes suddenly and rapidly into the disposition to meet her gallant, and then, for the time being, resigns herself entirely to him; not the smallest coyness is observable, except in very young Ewes. On this occasion, the female sheep, if not so amorous, is more passive, than that of any of our domestic quadrupeds, the dog not excepted; her inclinations are discoverable if in flock with Ewes only, sometimes, though rarely, by her

mounting on others, if in company with wethers, they will instinctively fondle on her; when in company with or near the Ram, she seeks him, remains near him, and will smell at, and caress him occasionally; but the strong decisive proof of her inclination is, that when the Ram mounts, she remains still, does not attempt to throw him, by moving forward, and will generally while under the Ram bend her head round toward him: on the contrary, a Ewe disinclined, when mounted, uniformly moves forward with a quick pace, dislodges the Ram at every attempt, and thus presently dismisses him, satisfied that the pursuit is vain; yet will he in this way sue another, and another, through the whole flock, unless arrested by some one really amorous, during greater part of the day and night, constantly exhausting himself by fatigue, and for the want of food, which he rarely takes when in the midst of his female companions. It does not always happen that impregnation is the consequence of coition; with this, as with other animals, there is a degree of uncertainty; in a case of failure the Ewe returns to the Ram, about the fourteenth day, and sometimes tho' rarely, this happens more than once to the same individual in a season; it may be reckoned, however, that not more than one in the number of seven or eight will so return. The period of gestation is twenty one weeks, two or three days more or less. Both sexes of this animal copulate at an early age, at six months, and at such a Ram Lamb will impregnate; and a Ewe will become a mother at twelve months, unless precautions are taken to prevent it.

From what has been said, it must be evident, that the same powers of propagation cannot belong to a ram at large with a flock of ewes, that will be possessed by one separated from all, the greater part of the day, admitted occasionally to a few at a time, of such as are disposed to yield, without the labor of running and sueing on his part, and left to sleep and feed quietly the rest of his time: he may impregnate in the field, running at large with the ewes, fifty or sixty; if kept well, and apart, he will cer-

tainly do justice to an hundred, some think to an hundred and fifty, in a season.

To effect our purpose, then, with the most safety and certainty, and with the least expense and trouble, is the object. By some, teazers are used, to facilitate the process; that is, a common ram is made an instrument wherewith to ascertain the disposition of the ewes, and as fast as they are found to be in the proper humor, they are taken from him, and put in with the more favored breeder. This method, without great care, and close attention, is hazardous; the teazer may overact his part, and introduce a spurious race: to give an opportunity to such as may chuse to adopt it, however, it will be described. There are two ways of using a teazer: the most ready, if well watched, is to put him once a day, loose among the ewes, in a small pasture, having first fixed on him an apron, to prevent mischief, and colored it with a little dry paint, ochre, or lampblack, that he may leave his mark on each ewe willing to receive him: this apron is made of stout linen cloth, about fifteen or eighteen inches square; and by means of two strings, is, at one end, fastened round the body of the sheep, (a ribbon of the wool, an inch wide, being first taken off, all round the part to which the apron is to be secured, to prevent its slipping,) the rest is loose, so that when he stands in his ordinary position, the apron hangs down perpendicularly, just forward of the parts of generation, and touching the ground: when he mounts, the apron falls back, covers those parts, as he rises, and becomes a complete barrier to his access. The other, and the safest, mode of employing the services of a teazer, is, to have him confined in a high, secure, but open fenced little pen, adjoining the enclosure in which the ewes are pastured, and exactly against his pen, and within the ewes' enclosure, to have another pen opening, by means of a small gate, into that enclosure, so that the ewes, when the gate is left open, may, by entering this last pen, approach the ram, within the thickness of the fence, see him, &c. they should be driven up to that part of the

field once or twice a day, when it will be seen that those disposed to take the ram, will be found hankering about the teazer, and generally in the pen, prepared for the convenience of catching, as above described.

In preference, the following process, having been tried, and found to succeed entirely, is recommended, as the most safe, tho not quite so advantageous to the breeding ram In the first place, for this system, (as for that where the teazer is employed,) let there be provided a paddock of an acre or two of good grass, containing shade and water, and well fenced, for your stock ram; here let him be confined with one or two wethers for company, at least a month before the season commences, and well fed on grain, Indian corn, hominy, oats, &c. twice a day, so as to get him in high order, and quite gentle; he should wear a leathern collar about his neck, for the facility of leading, unless he be horned, in which case, it may or may not be used, as he can be handled by the horns. Between the principal pasture, in which the ewes are kept, and the ram's paddock, there should be, if it can be conveniently provided, an intervening lot or pasture, so that the ewes may be at feed out of his sight; adjoining the ram's paddock, and within the intervening lot, let there be two pens to receive the ewes occasionally, one roomy enough for them to move in, without being crowded, and the other small, in order that, when turned into it, they will stand so closely, a man may take hold of any one without racing or struggling; the fences of these pens should be straight, to prevent accidents by pressing the sheep against corners; they should join each other, and be connected with the ram's paddock; so that the fence of the paddock form a side of each pen: by means of three small gates, or setts of slip bars, the larger pen should open, on one side, into the smaller; on another, into the ram's paddock; and, on a third, into the intervening lot or pasture.

When the season has come for putting the ewes to the ram, which each person will determine by the time he wishes his lambs to drop, all those selected for breeding

should be separated from the other sheep; their hinder parts should be cleansed of tags and filth, and the wool of every ewe should be shorn from and about the root of the tail, for two or three inches round; otherwise the operations of the ram will be retarded, and his vigor uselessly wasted, to a degree not at first to be imagined. The ram, when the season commences, should be well fed, but not excessively, on grain, every morning, at or before day break. At sun rise, the ewes are to be driven up into the larger pen, before described: the ram is then led up, and, thro the gate that communicates, is turned in to them, for half an hour, or thereabout, during which time, an attentive observer, will readily discover, by the habits described in the first part of this paper, which of the ewes are inclined, and will learn to put his eye on some distinguishing mark on each, whereby to know her, at least until she can be caught. As soon as it is ascertained how many, or that four or five may be so selected, the keeper takes hold of the ram, leads him back into his paddock, and, having first painted his breast, that is, the wool, between and a little forward of and behind his fore legs, with a spoonful or two of dry ochre, lampblack, or something of the kind, rubbed on with the hand, dismisses him The ewes are then turned into the smaller pen, and as many as have been observed to be properly disposed, but not exceeding four, are turned in with him, there to remain till the evening The flock of ewes are now turned to their former pasture, till the next morning, when the same operation is repeated. The ewes left with the ram, are taken from him, an hour or two before sun set. Those that have been served, as will be seen by the mark his painted breast will have left on their backs, should be put into a distant and separate pasture; and those not served, if any, returned to the flock they came from. This operation being repeated daily, will gradually diminish the numbers of visiting ewes, and make every selection easier both to the ram and the keeper; and another advantage is, that by withdrawing the served ewes, for a time, from the sight of

the ram, they will be more apt to conceive: when his female companions are taken from him, the ram will feed and recruit, and at sun set he should have another good bait of grain: under this treatment, if he is hearty and vigorous, he will remain in good condition, throughout the season. Should, at any time, his vigor be perceived to flag, the daily provision of ewes should be lessened. After the whole, or nearly the whole flock shall have been marked by the ram, and thus passed into the distant pasture, they should be returned to their former station, and made to revisit the ram, as described in the first instance; when some will again be found disposed to take him: and finally, toward the end of the season, he ought to be turned out during the day, for two or three weeks, to run with the whole flock, in a near and safe pasture, that he may finish any little part of his work, left accidentally undone.

The attendance on the breeding sheep, during the season, should be confided to some intelligent and trusty man; and he should be particularly instructed to keep the ram quite gentle, and that he does not get a habit of butting, and to observe the ewes so closely, whenever he has them about him, that he may learn to know them, one from the other: this is easily effected, even in a large flock, by a little attention, and will be of great utility in ascertaining the particular state of the different ewes.

When the proper arrangements are made, it will not require more than one or two hours, per day, of the keeper's time, to attend to his sheep. But in this, as in other matters, the superintendance of the master will make all more safe and more sure.

Progress of Manufactures.

A few weeks since a gentleman in this city purchased twenty bales of Merino wool, at auction, at 90 day's credit. The wool was sent to Poughkeepsie, and has been manufactured by Mr. Booth. The cloth is returned to this city, and is now selling at ten dollars a yard, being considered equal to Dutch cloth at 14. And the notes for the wool are not yet due.—*Columbian.*